An Epidemiological Study of the Incidence of Abnormal Pregnancy in Areas Heavily Contaminated with Methylmercury

Yaeko Itai*, Tadashi Fujino, Keiko Ueno and Yasuko Motomatsu

Minamata Kyoritsu Hospital,
2-2-12 Sakurai-cho, Minamata City, Kumamoto, Japan

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To determine the relationship between abnormal pregnancy in humans and methylmercury contamination, a retrospective study was conducted on women in two heavily contaminated areas, Modo (area M) and Akasaki (area A). Abnormal pregnancy was defined as fetal death, i.e., stillbirth and spontaneous abortion. In area M, prior to 1956, the incidence of abnormal pregnancy among the respondents was 7.0%. The incidence increased to 18.1% in the period between 1956 and 1968, when the pollution became serious. In area A, the incidence increased from 5.4% before 1956 to 14.2% between 1956 and 1968. In each area, the difference in the incidence between two periods, i.e., before and during the severe contamination, was statistically significant (area M, \(p<0.01\); area A, \(p<0.001\)).

Women living in Ikitsuki Island (area I) were selected as the control group. The incidence of the abnormal pregnancy in the three areas was compared by the birth years of mothers. Among women born between 1931 and 1940, the incidences were 26%, 15.1% and 13.5% in areas M, A and I, respectively. These women reached their reproductive age during the period of severe contamination in the two areas. The differences in the incidence between areas M and A and between areas M and I were statistically significant (areas M and A, \(p<0.05\); areas M and I, \(p<0.01\)). These suggest that there is a relationship between methylmercury contamination and the increase in abnormal pregnancy in humans.

*E-mail: yitai@coral.ocn.ne.jp